

**REMARKS**

These remarks follow the Final Office Action mailed November 15, 2005 and the Advisory Action mailed February 2, 2006. Claims 1 and 13 have been amended. Support for the amendments can be found at, for example, page 7, paragraphs 0032 and 0033. New claim 54 has been added. Support for the new claim can be found in the specification as originally filed (see, e.g., paragraphs [0008], [0009], [0036], [0079-0086] and [0090-0096]). No new matter is believed to have been introduced.

**I. REJECTION UNDER 35 U.S.C. §112, FIRST PARAGRAPH**

Claims 1, 4, 5, and 44-48 stand rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description requirement. The claim(s) allegedly contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s) at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection.

Claim 1, upon which the remaining claims depend, is supported by the specification. For example, paragraph [0032] indicates that the substrate may be monocrystalline (see, e.g., lines 3-4 of paragraph [0032]). Paragraph [0033] further indicates that the "crystalline silicon can be transformed through etching or physical processing to produce a layer of material ...commonly denoted as porous silicon...." At paragraph [0033], last two sentences, the specification states, "A portion of the silicon-containing material. . . may have a porosity less than approximately 30 percent. In another embodiment, . . . no greater than approximately 10 percent."

We believe the foregoing remarks and amendments address the rejection. Accordingly, we respectfully request withdrawal of this §112, first paragraph rejection.

**II. REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

Claims 1, 4, 5, and 44-48 stand rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection.

Applicants submit that the amendments to claim 1 overcome the rejection. Accordingly, the rejection may be properly withdrawn.

**III. REJECTION UNDER 35 U.S.C. §102**

Claims 13, 16, 17, 21, 25-27, 41 and 49-53 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by Linford et al. (U.S. Patent No. 5,429,708). Applicants respectfully traverse this rejection.

Claim 13, upon which the remaining claims depends, recites that the substrate has a porosity of "not more than 30%". According, to the Office Action mailed September 29, 2003, at page 6, lines 3-4, "The prior art of Linford, as explained above, discloses each of the claimed features ***except for indicating the porosity to have an upper limit of 30%.***" (Emphasis added). Thus, Linford cannot anticipate Applicants' claims 13, 16, 17, 21, 25-27, 41 and 49-53.

Accordingly, the rejection may be properly withdrawn.

Furthermore, Linford in combination of Aboaf does not teach or suggest Applicants' claimed invention as the combination would require extensive redesign of the teachings of Aboaf to arrive at the structure and properties of Applicants' claimed invention.

Claims 13, 16, 21-24, 41, and 49-52 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Bansal et al. ("Alkylation of Si surfaces using a two-step halogenation/Grignard route," J. of the American Chem. Soc., 118:7225-7226, 1996). Applicants respectfully traverse this rejection.

Claim 13, upon which the remaining claims depends, recites that the substrate has a porosity of "not more than 30%". Bansal et al. do not teach this element. Thus, Bansal cannot anticipate Applicants' claims 13, 16, 17, 21, 25-27, 41 and 49-53.

Accordingly, the rejection may be properly withdrawn.

#### **IV. REJECTION UNDER 35 U.S.C. §103**

Claims 1, 4, 5, and 44-48 stand rejected under 35 U.S.C. §103 as allegedly unpatentable over Bruce et al. (U.S. 6,312,581) in view of Linford et al., (U.S. 5,429,708) and Wolf et al., (Silicon Processing for the VLSI Era, Vol 1 – Process Technology, Lattice Press: Sunset Beach, CA, 1986, pg. 5). Applicants respectfully traverse this rejection.

Bruce et al. do not teach or suggest a monocrystalline porous silicon containing material with no more than 30% porosity (see, e.g., the Final Office Action

at page 11, line 1 and column 4, lines 55-58). Bruce et al. teach only 55 and 56% porosity.

In order to overcome the deficiencies of Bruce et al., Bruce et al. is combined with Linford et al. Although there is no motivation to combine the teachings, even if combined the combination of Bruce et al. and Linford et al. would fail to teach or suggest a porosity of no more than 30%. As discussed above, Bruce et al., teaches 55-56% porosity. According, to the Office Action mailed September 29, 2003, at page 6, lines 3-4, "The prior art of Linford, as explained above, discloses each of the claimed features ***except for indicating the porosity to have an upper limit of 30%.***" (Emphasis added). Thus, the combination of Bruce et al. and Linford et al. fails to teach or suggest each element of Applicants' claimed invention.

Furthermore, the addition of Wolf (although there is no motivation to combine the references) with Bruce et al. does not cure the deficiencies of the prior references. Similarly, the addition of Bruce et al. and Wolf fails to teach or suggest of porosity of no more than 30%.

Thus, the combination of references fails to teach or suggest each and every element of Applicants' claimed invention. Accordingly, a prima facie case of obviousness has not been provided. Applicants respectfully request withdrawal of the rejection.

#### **V. NEW CLAIM 54**

The Examiner has repeatedly cited Linford et al. for the alleged teaching that of Applicants claimed invention. For example, in the office action mailed May 20, 2004, the Examiner indicates that "It is seen to be ***inherent*** that the organic layer changes

the electrical property of the silicon-containing material. . . " (See, page 4, lines 4-5 of the office action mailed May 20, 2004; emphasis added). The Examiner than states:

See In re Swinhart, 169 USPQ 226, 229 (CCPA 1971) (where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that subject matter known to be in the prior art does not possess the characteristics relied on) and In re Fitzgerald, 205 USPQ 594 (CCPA 1980) (the burden of proof can be shifted to the applicant to show that subject matter of the prior art does not possess the characteristic relied on whether the rejection is based on inherency under 35 USC 102 or obviousness under 35 USC 103).

(page 4, at lines 9-16). The office action then further elaborates on the reliance upon the inherent characteristics allegedly taught by Linford et al.

Applicants respectfully submit that inherency may not be established by probabilities or possibilities. There mere fact that a certain thing may results from a given set of circumstances is not sufficient to establish inherency. (see Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Furthermore, "Under the principles of inherency, if *the prior art necessarily functions in accordance with, or includes, the claimed limitations*, it anticipates." (Atlas Powder Co. V. Ireco Inc. 190 F. 3d 1342 (Fed. Cir. 1999) (Emphasis added).

Applicants have recognized the Examiner's position and the shift in the burden back to the Applicants to demonstrate that Linford et al. does not inherently teach Applicants' invention. Applicants have provided data and a 1.132 Declaration (attached hereto) that demonstrates that Applicants' invention does not "necessarily" flow from the teachings of Linford et al. As evidenced in the accompanying Declaration, attaching an organic layer to a silicon surface does not inherently result in a structure having improved electrical properties. In particular, the Declaration

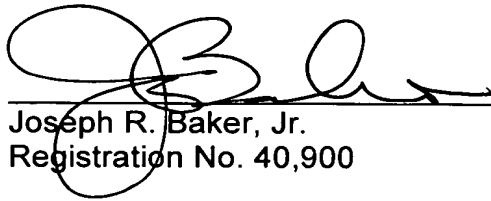
presents data showing that certain organic layers attached to a silicon surface actually have a deleterious effect on electrical properties. Thus, Linford et al. cannot anticipate claim 54 based upon anticipation.

Respectfully submitted,

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